

REMARKS

The present application relates to hybrid maize plant and seed 39R62. Claims 1-32 are currently pending in the present application. Applicants respectfully request consideration of the following remarks.

I. Specification

The specification is objected to for containing blank lines on page 7 in the last paragraph. Applicants respectfully submit that the actual ATCC deposit will be delayed until the receipt of notice that the application is otherwise in condition for allowance. As provided in 37 C.F.R. §§ 1.801-1.809, Applicants wish to reiterate they will refrain from deposit of Hybrid 39R62 until allowable subject matter is indicated. Once such notice is received, an ATCC deposit will be made, and the specification will be amended to contain the accession number of the deposit, the date of the deposit, a description of the deposited biological material sufficient to specifically identify it and to permit examination and the name and address of the depository. In addition, Applicants submit that at least 2,500 seeds of Variety 39R62 will be deposited with the ATCC. In view of this assurance, the rejection under 35 U.S.C. § 112, first paragraph, should be removed (MPEP § 2411.02). Such action is respectfully requested.

II. Detailed Action

Applicants submit new claims 33-43 have been added. These claims are supported by the specification and do not add new matter.

III. Claim Objections

Claims 6, 12, 16, 25, and 29 were objected to. The Examiner states in line 1 of the claims, "A" should be --The--.

Applicants have amended the claims by replacing "A" with --The--, thus alleviating this rejection.

IV. Double Patenting

Claims 1-32 were rejected under the doctrine of obviousness-type double patenting as being unpatentable over claims 1-31 of US Patent No. 6,222,102 ('102). The Examiner states that although the conflicting claims are not identical, they are not patentably distinct from each

other because they both appear to be drawn to the same maize seeds, plants, plant parts, and methods. The instantly claimed plants and the patented plants have different designations. The designation "39R62" of the instantly claimed cultivar is arbitrarily assigned, and does not provide any patentable distinction from the cultivar claimed in '102, "38K06". Any differences between 39R62 and 38K06 of '102 are due to minor morphological variations that do not confer patentable distinction. The instantly claimed maize plants that have as at least one ancestor 39R62, or 39R62 containing one or more transgenes, or 39R62 containing one or more genes transferred by backcrossing would then be encompassed by the patented maize plants that have at least one ancestor 38K06, or 38K06 containing one or more transgenes, or 38K06 containing one or more genes transferred by backcrossing. The Examiner concludes that since 39R62 and 38K06 are not patentably distinct, the claimed methods that comprise their use are obviously the same as well. Therefore, a patent issuing from the instant application would then effectively extend the patent term of the claims of '102.

Applicant traverse. Claims 1-32 are patently distinct because they involve a novel maize seeds, plants, plant parts, and methods. Applicants detailed arguments are set forth infra in Claim Rejections 102/103 section.

Applicant further asserts the use of the designation "39R62" is not arbitrarily assigned. It is common practice within plant breeding that a new and distinct maize seed is designated with a numerical number such as 39R62 which defines the claimed hybrid maize seed which will be deposited under an ATCC accession number. The use of such a designation is a common practice within the art and would be well understood by one skilled in the art to be two distinct and unrelated hybrid maize seeds. In addition, as provided in 37 C.F.R. §§ 1.801-1.809, Applicant wishes to reiterate they will refrain from deposit of Hybrid 39R62 until allowable subject matter is indicated. Once deposit is completed Applicant will amend claims 1, 5 and 7 accordingly and this rejection will be moot. Therefore, Applicant submits this terminology is not indefinite and reconsideration is respectfully requested.

V. Claim Rejections-35 USC §112

Claims 1-32 were rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner states that the recitation "39R62" in claims 1, 5, 7, 11, 15, 19, 24, 28, and 32 render the claims and those dependent thereon indefinite. Since the name "39R62" is not known in the art, the use of said name does not carry art-recognized limitations as to the specific or essential characteristics that are associated with that denomination. The name "39R62" does not clearly identify the claimed seeds, plants, and plant parts, and does not set forth the metes and bounds of the claimed invention. The name appears to be arbitrarily assigned and the specific characteristics associated therewith could be modified. The missing ATCC accession number in claims 1, 5, and 7 similarly renders the claims indefinite, as the claims do not clearly identify the deposited seed. The Examiner states that amending claims 1, 5, and 7 to recite the ATCC deposit number in which hybrid maize seed 39R62 has been deposited would overcome this rejection.

Applicants traverse. As stated previously the use of the designation "39R62" is not indefinite. One ordinarily skilled in the art would clearly understand that this designation is drawn to a new and distinct hybrid maize seed with the designation of 39R62 and the morphological and physiological traits that are disclosed in the specification. (See Tables 1-4, pgs. 18-28). Applicant asserts that the use of such a designation is a common practice within the art and would be well understood by one skilled in the art to be designating two distinct and different hybrid maize seeds. In addition, Applicant wishes to reiterate that under 37 C.F.R. §§ 1.801-1.809, Applicant will refrain from deposit of hybrid 39R62 until allowable subject matter is indicated. Once deposit is completed, Applicant will amend claims 1, 5 and 7 accordingly and this rejection will be moot.

Claims 11, 15, 19, 24, 28, and 32 were rejected under 35 USC 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that the terms "excellent", "good", "above average", "good early", and "suited" are relative terms that have no definite meaning. The terms do not reasonably apprise one of the scope of the invention. It is not clear what type of yield, grain yield, pollen yield, seed yield, etc., the recitation is referring to. The recitation "Northwest, Northcentral, Northeast regions of the United States as well as Central and Eastern Canada" also renders the claims indefinite. It is not exactly clear what states or geographic areas define these regions.

Applicants traverse this rejection. Each of these claims recites two requirements, first that 39R62 be an ancestor of the plant and second, that the claimed plant be "capable of expressing a combination of at least two 39R62 traits" selected from a Markush grouping. Applicant notes that the Markush listing is directed to "39R62" traits. Thus, Applicant submits that the recitation of 39R62 traits clearly delineates the traits listed as those which are from 39R62 or ancestors thereof. The recitation of "39R62" in front of the term traits clearly indicates that the traits must be originating from 39R62. This is particularly so since the claim also requires that the plant 39R62 must be an ancestor of the claimed plant. Applicant further submits that the adjectives used within the claims are not unduly narrative or imprecise as they do clearly characterize and positively recite the degree of expression of the particular traits within the application in Tables 1-4 (pages 18-34). This terminology is well known in the art and commonly used within breeding techniques of hybrid plants. In addition, Applicant asserts it is exactly clear what states or geographic areas define these regions and would be understood to one skilled in the art. Applicant respectfully submits that this language is not indefinite and would be understood by one in the art and is the terminology of use within the art. Therefore, Applicant respectfully requests reconsideration.

Furthermore, in Georgia-Pacific, the Federal Circuit stated that "...the policy of the patent statute contemplates granting protection to valid inventions, and this policy would be defeated if protection were to be accorded only to those patents which were capable of precise definition." Georgia-Pacific Corp. v. U.S. Plywood Corp., 258 F. 2d 124, 136,118 USPQ 122 (2d Cir.), cert. denied, 358 US 884 (1958). While some decisions have advocated the general statement that "[a]n invention must be capable of accurate definition, and it must be accurately defined, to be patentable" (See United Carbon Co. v. Binney & Smith Co., 1942, 317 US 228, 237, 63 S.Ct. 165, 170, 87 L.Ed. 232), the Federal Court has stated that "such general statements, however, must be viewed in the context of circumstances. Objectionable indefiniteness must be determined by the facts in each case, not by reference to an abstract rule." Georgia-Pacific at 136. "Patentable inventions cannot always be described in terms of exact measurements, symbols and formulae, and the applicant necessarily must use the meager tools provided by language, tools which admittedly lack exactitude and precision. If the claims read in light of the specifications, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand

no more." Georgia-Pacific at 136. (See North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 28 USPQ 2d 1333, 1339 (Fed. Cir. 1993)).

Moreover, it is against the policy of the patent statutes to bar patent protection for inventions that are incapable of precise definition. Georgia-Pacific Corp. v. U.S. Plywood Corp., 258 F. 2d 124, 118 USPQ 122 (2d Cir.), cert. denied, 358 US 884 (1958). With respect to the above-mentioned terms, the claims are as precise as the subject matter of the invention permits.

With respect to the regions of the United States, Applicants have amended the claims by stating what states make up these regions, thus alleviating this rejection.

Claims 10, 14, 18, 23, 27, and 31 are indefinite for improper antecedent basis. The Examiner states the claims indicate they are directed to the corn plant breeding program of claims 9, 13, 17, 22, 26, and 30, respectively. However, claims 9, 13, 17, 22, 26, and 30 are directed to methods, not programs. The Examiner suggests that the recitation "corn plant breeding program" in line 1 of claims 10, 14, 18, 23, 27, and 31 be replaced with --method--.

Applicants have amended the claims in accordance to Examiner's suggestion by changing the recitation "corn plant breeding program" in line 1 of claims 10, 14, 18, 23, 27 and 31 with --method--, thus alleviating this rejection.

VI. Claim Rejections- 35 U.S.C. § 112

Claims 8, 11-19, 21, and 24-32 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Examiner asserts the claims are broadly drawn towards a corn plant produced by growing seed of any hybrid maize seed designated 39R62, wherein said plant is male sterile; or any maize plant or its parts wherein at least one ancestor is 39R62 and expresses a combination of at least two 39R62 traits; or a hybrid maize plant grown from seed of 39R62, or which has all the morphological and physiological traits as the plant grown from 39R62 seed, and which contains one or more transgenes; or a method for developing a maize plant in a maize plant breeding program comprising said hybrid maize plant comprising one or more transgenes; or any maize plant wherein at least one ancestor is the hybrid maize plant comprising one or more

transgenes and which expresses at least two 39R62 traits, or a hybrid maize plant grown from 39R62 seed wherein the genetic material contains one or more genes transferred by backcrossing, or a method for developing a maize plant in a maize plant breeding program comprising said hybrid maize plant comprising one or more genes transferred by backcrossing; or any maize plant wherein at least one ancestor is the hybrid maize plant comprising one or more genes transferred by backcrossing and which expresses at least two 39R62 traits.

The Examiner states the specification does not describe 39R62 as being male sterile. The specification discusses how plants may be manipulated to be male sterile, however, the morphological and physiological description of plant 39R62 described in the specification does not indicate that it is male sterile.

Applicants have amended claims 8 and 21 by adding the recitation --has been manipulated to be male sterile--, thus alleviating this rejection. Support can be found on page 13 of the specification, between the definitions for POL WT and POP K/A wherein it states "[i]t should be understood that the inbred can, through routine manipulation of cytoplasmic or other factors, be produced in a male-sterile form. Such embodiments are also contemplated within the scope of the present claims."

Next, the Examiner asserts the specification also does not describe the plants developed by the maize breeding programs, transgenic 39R62 plants, 39R62 plants further comprising genes transferred by backcrossing, or maize plants wherein at least one ancestor is corn variety 39R62 and which expresses at least two of the traits listed in claims 11, 15, 19, 24, 28, or 32. The morphological and physiological traits of the corn plants that are crossed with 39R62, and with progeny of that cross are unknown, and the description of progeny and descendants of corn plant 39R62 are unknown. The Examiner further asserts that the description of corn plant 39R62 is not indicative of any of its descendants. To say that a plant expresses two traits of another plant is not sufficient information to describe that plant, as numerous plants express at least two of the same traits as those expressed by 39R62. Two plant traits do not provide any description of the other traits of a plant. It is possible that the claimed plants inherited the genes governing those traits from an ancestor other than plant 39R62.

Given the breadth of the claims encompassing corn plant 39R62 having male sterility, corn plants expressing at least two traits that are also expressed by 39R62, any transgenic 39R62 plant, any 39R62 plant further having any gene(s) introduced by backcrossing, methods

comprising the use of such plants, lack of guidance of the specification as discussed above, the specification fails to provide an adequate written description of the multitude of corn plants and their parts encompassed by the claims.

Applicant traverses this rejection. Applicant has amended claims 11, 15, 19, 24, 28 and 32 by adding the threshold, having 50% of the ancestral alleles, that limits the variation permitted among the genus, as well as an assayable function, capable of expressing at least a combination of two traits of 39R62. There is literal support for the amended claims found in the specification on page 3 and beginning on page 29 of the instant specification. Plant breeding techniques known in the art and used in the maize plant breeding program include, but are not limited to the following: recurrent selection backcrossing, pedigree breeding, restriction length polymorphism enhanced selection, genetic marker enhanced selection and transformation. With the amendments to the above-stated claims, Applicant has identified a transgenic 39R62 plant (claim 12), a 39R62 plant further comprising genes transferred by backcrossing (claim 16), or a maize plant wherein at least one ancestor is maize variety 39R62 (claim 15) by defining a particular threshold that limits variation and reciting a functional test to identify such plants. In addition, Applicant has drafted new claims 33-43 which Applicant believes come within the purview of the written description requirement and do not add new matter. Under the written description requirement, Applicant should be allowed to claim the progeny of a cross of maize plants crossed with 39R62 with phenotypic characteristics since distinguishing identifying characteristics in the chemical and biotechnological arts, dealing with DNA, are those such as: partial structure, physical and/or chemical properties, functional characteristics, known or disclosed correlation between structure and function, method of making, and combinations of the above. In plants, these identifying characteristics are those detectable in the phenotype which are manifested through gene expression. Claims to a particular species of invention are adequately described if the disclosure of relevant identifying characteristics are present in the application. Again, one of ordinary skill in the art is reasonably apprised in knowing that a plant crossed with 39R62 will result in a plant having half of the genetic contribution of 39R62. A further limitation set by Applicant is that the plants must be capable of expressing a combination of at least two phenotypic characteristics of 39R62.

Further, Applicant asserts the specification supplies an extensive definition and description of 'transgene' and transgenes of interest. (See generally pages 29, last paragraph to

pg. 30 and pages 35-40 for an extensive list of potential transgenes.) Applicant also notes, a person having skill in the art could insert a DNA gene into a selected maize plant. The Examiner also states that the insertion of a single copy of a gene into a plant would produce a plant that is indistinguishable from its non-transformed plant. Applicant has defined transgenes in the present application in the paragraph that spans pages 29-30 as follows:

With the advent of molecular biological techniques that have allowed the isolation and characterization of genes that encode specific protein products, scientists in the field of plant biology developed a strong interest in *engineering the genome of plants to contain and express foreign genes, or additional genes* (perhaps driven by different promoters) in order to alter the traits of a plant in a specific manner. *Such foreign, additional and/or modified genes are referred to herein collectively as "transgenes".* Over the last fifteen to twenty years several methods for producing transgenic plants have been developed, and *the present invention, in particular embodiments, also relates to transgenic versions of the claimed hybrid maize line 39R62.*

The present application clearly describes and defines a transgene to be a gene transferred into a plant wherein the product of that gene is expressed. This expression will confer a new or improved trait into that plant. However, this gene is but a tiny fraction of the entire genome. In other words, the plant of claim 12 is distinguishable from the prior art plants just as is hybrid 39R62 without the transgenes. Further, the plant of claim 12 also contains a trait(s) that is either improved or additional to the traits of the maize plant of claim 2. The 39R62-transgene plant still expresses the unique combination of traits of 39R62 without the transgenes with the exception of the traits expressed by the transgenes. The trivial modifications introduced by the transgenes to the unique invention of 39R62 are clearly supported and described in the present application.

Finally, the Examiner asserts that the specification provides a narrative of the transgene within the scope of the claim to particularly point out and distinctly claim the subject matter the applicant regards as the invention. However, Applicant respectfully submits that "[t]he test for definiteness is whether one skilled in the art would understand the bounds of the claim when read in light of the specification. . . . If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, § 112 demands no more. . . . The degree of precision necessary for adequate claims is a function of the nature of the subject matter." Miles Laboratories, Inc. v. Shandon Inc., 997 F.2d 870 (Fed. Cir. 1993).

In light of the above remarks, Applicant respectfully requests reconsideration and withdrawal of the rejections to claims 8, 11-19, 21 and 24-32 under 35 U.S.C. § 112, first paragraph.

Claims 1-32 were rejected under 35 USC 112, first paragraph, as containing subject matter which is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The Examiner states the claims are broadly drawn. Since the claimed seed of maize hybrid line 39R62 is essential to the claimed invention, it must be obtainable by a repeatable method set forth in the specification or otherwise be readily available to the public. The Examiner further states that if the seed is not so obtainable or available, a deposit thereof may satisfy the requirements of 35 USC 112. The specification does not disclose a repeatable process to obtain the exact same seed in each occurrence and it is not apparent if such a seed is readily available to the public. The Examiner further states that if the seeds are deposited under the terms of the Budapest Treaty, then an affidavit or declaration by the Applicants, or a statement by an attorney of record over his/her signature and registration number, stating that the seed will be irrevocably and without restriction or condition released to the public upon the issuance of a patent would satisfy the deposit requirement made herein.

Applicant wishes to state that the actual ATCC deposit will be delayed until the receipt of notice that the application is otherwise in condition for allowance. Once such notice is received, an ATCC deposit will be made, and the specification will be amended to contain the accession number of the deposit, the date of the deposit, a description of the deposited biological material sufficient to specifically identify it and to permit examination and the name and address of the depository. The claims will also be amended to recite the ATCC deposit number. In addition, Applicant submits that at least 2,500 seeds of Hybrid 39R62 will be deposited with the ATCC.

In light of the above remarks, Applicant submits that claims 1-32 clearly describe and distinctly claim the subject matter Applicant regards as the invention. Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, first paragraph.

VII. Issues Under 35 U.S.C. § 102/103

Claims 1-32 were rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Carrigan (U.S. Patent 6,222,102).

The Examiner states the claims are broadly drawn towards the following: hybrid maize seed designated "39R62; a corn plant produced by growing seed of any hybrid maize seed designated 39R62, or parts thereof; or wherein said plant is male sterile; or any maize plant or its parts wherein at least one ancestor is 39R62 and expresses a combination of at least two 39R62 traits; or a hybrid maize plant grown from seed of 39R62, or which has all the morphological and physiological traits as the plant grown from seed 39R62 seed, and which contains one or more transgenes; or a method for developing a maize plant in a maize plant breeding program comprising said hybrid maize plant comprising one or more transgenes; or any maize plant wherein at least one ancestor is the hybrid maize plant comprising one or more transgenes and which expresses at least two 39R62 traits; or a hybrid maize plant grown from 39R62 seed wherein the genetic material contains one or more genes transferred by backcrossing; or a method for developing a maize plant in a maize plant breeding program comprising said hybrid maize plant comprising one or more genes transferred by backcrossing; or any maize plant wherein at least one ancestor is the hybrid maize plant comprising one or more genes transferred by backcrossing and which expresses at least two 39R62 traits.

The Examiner states Carrigan teaches seed of a hybrid maize line designated "38K06", plants produced by growing said seed, and plant parts, including pollen and ovules. It appears the claimed plants and seeds of the instant invention may be the same as 38K06, given that they exhibit similar traits. Alternatively, if the claimed plants, plant parts, and seeds of 39R62 are not identical to 38K06, then it appears that 38K06 only differs from the instantly claimed plants, plant parts, and seeds due to minor morphological variation, wherein said minor morphological variation would be expected to occur in different progeny of the same cultivar, and wherein said minor morphological variation would not confer a patentable distinction to 39R62.

Carrigan also teaches a maize plant having all the morphological and physiological characteristics of 38K06 and being male sterile, and methods to confer male sterility to corn plants, and asserts that large-scale commercial maize hybrid production requires the use of some form of male sterility, and that a reliable method of controlling male fertility in plants also offers the opportunity for improved plant breeding. Carrigan also teaches production of tissue culture of regenerable cells from a plant of line 38K06, wherein regenerable cells are from tissues including flowers, pollen, ovules, among others; a plant produced from tissue culture 38K06 that is capable of expressing all the morphological and physiological traits of 38K06; corn plant

breeding programs, including backcrossing, pedigree breeding, recurrent selection, among others; maize plants having as at least one ancestor 38K06, or 38K06 containing one or more transgenes, or 38K06 containing one or more genes transferred by backcrossing; use of backcrossing to introduce gene(s) for desirable traits; 38K06 comprising at least one transgene, and using the plant in maize breeding programs; maize plants produced by those breeding programs, 38K06 comprising gene(s) introduced by backcrossing, and use of the plant in a method for developing a plant for breeding programs. The claimed invention was *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, if not anticipated by Carrigan.

Applicants traverse. The Applicants would like to point out that the inventions 39R62 and 38K06 are not the same inventions. Nor are their differences minor morphological variations. Applicants submit that the claimed plant cannot be rendered obvious as it possesses a unique combination of traits which confers a unique combination of genetics.

Moreover, Applicants claim a method of making a plant which did not previously exist. Pursuant to the recent Federal Circuit decision, Elan Pharmaceuticals, Inc. v. Mayo Foundation for Medical Education & Research, No. 00-1467 (Fed. Cir. Aug. 30, 2002), "a novel patented product is not "anticipated" if it did not previously exist." Id. This is the case whether or not the process for making the new product is generally known. Id. The invention 39R62 has not previously existed as it is the result of the crossing the two maize inbred lines GE570800 and GE533276.

Furthermore, the inventions 39R62 and 38K06 differ for various traits that are not minor. See Tables 2A, 2B and Table 2C of the instant specification. Furthermore, when looking at the tables of both inventions, hybrids created using 39R62 as one of the parents are clearly not anticipated by hybrids made using 38K06 as one of the parents.

Applicants further submit that the claims do not simply recite traits, but instead recites these specific traits only to the extent that they are "39R62" traits; thereby being derived from the seed/germplasm of 39R62. Note, variety with respect to agricultural variety, can be defined as a group of similar plants that by structural features and performance can be identified from other varieties within the same species. Moreover, the claims also recites that the claimed plant must have 39R62 as an ancestor further indicating that these traits were derived from the 39R62 plant.

In response to the Examiner's contention that one could not distinguish the claimed plant from the prior art which shows each of these traits, Applicants submit that one can easily tell by reference to the plants breeding history, which can be confirmed by its molecular profile, the claimed plant has plant 39R62 as an ancestor and expresses two or more "39R62" traits. Further, any phenotypic trait that is expressed is the result of the genetic material present in the plant, and 39R62 will have its own unique genetic background that will give rise to the claimed plant and this profile along with its combination with other plants will result in a unique combined genetic profile that is the product claimed.

There is no expectation of success that the crossing of the Hybrid 38K06 with some yet to be identified plant would yield a plant with two of the traits enumerated in the claimed invention because that particular plant did not begin with the claimed seed 39R62 which is essential. Applicant asserts that it is not the phenotypic characteristics alone that are claimed and taught in the instant invention. It is a combination of physiological and morphological characteristics, as claimed, which make the present Hybrid non-obvious and not anticipated over Carrigan. Further, In re Thorpe, states that "a product by process claim may be properly rejected over prior art teaching the same product produced by a different process", as noted by the Examiner. 227 U.S.P.Q. 964, 966 (Fed. Cir. 1985). However, Applicant submits that this is not the same product physiologically or morphologically as the cited prior art as can be evidenced by one skilled in the art through analysis of the data tables in each. In addition, it is impermissible to use hindsight reconstruction and the benefit of Applicant's disclosure to pick among pieces which are present in the art, there must be some suggestion to make the combination and an expectation of success. In re Vaeck, 20 U.S.P.Q.2d 1434 (Fed. Cir. 1991). Thus, the present application deserves to be considered new and non-obvious compositions in their own right as products of crossing when 39R62 is used as a starting material.

In light of the above, Applicants respectfully request the Examiner reconsider and withdraw the rejection to claims 1-32 stand rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Carrigan (U.S. Patent 6,222,102).

VIII. Issues Under 35 U.S.C. § 103

Claims 1-32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carrigan (U.S. Patent 6,222,102). The Examiner states the "claims are drawn to a hybrid maize plant exhibiting all of the characteristics of 38K06".

Applicants traverse. When looking at a maize plant it would be possible to find many traits that are similar between varieties such as the color of flowers or growth habit. However, to say there are similarities in phenotype between two varieties is not the same as saying that the two varieties have the same morphological and physiological characteristics as a whole, or that one is an obvious variant of the other. Further, similarity in phenotype does not mean that the two varieties will perform similarly, particularly in a breeding program. As stated above, variety with respect to agricultural variety may be defined as a group of similar plants that by structural features and performance can be identified from other varieties within the same species.

Applicants submit that hybrid 39R62 does not exhibit the same characteristics as 38K06. Carrigan does not teach or suggest hybrid maize plant 39R62 developed by a maize breeding program or the use of hybrid maize plant 39R62 in the production of tissue culture. It must be recognized that the hybrids provided by this invention are themselves unusual and unobvious results of a common process, in that they provide the unique combination of traits. Thus, hybrid 39R62 is to be considered a new and non-obvious composition in its own right as does its tissue culture as products of the process when 39R62 is used as starting material. Applicants point out that 39R62 is a unique plant hybrid which never before existed until Applicants filed the application and until its deposit of the same. As will be demonstrated below, several morphological and physiological characteristics of hybrid 39R62 are either different from or not present in 38K06.

*Differences between the two varieties are summarized in the table below:

<u>CHARACTERISTICS</u>	<u>39R62</u>	<u>38K06</u>
Tassel:		
Anther color	Purple	Light Green
Glume color	Purple	Light Green
Ear (Unhusked):		
Silk color	Pink	Light Green
Ear (Husked):		
Ear weight	154 gm	168 gm
Number of kernel rows	16	15
Kernel (Dried)		
% Round kernels (Grade)	55	17

Cobb diameter at midpoint	24 mm	21 mm
Insect Resistance 2 nd Generation (Typically Leaf Sheath-Collar Feeding)	6	4

*Difference drawn from the tables of instant specification and '102.

This comparison clearly shows that 38K06 does not exhibit the characteristics of hybrid 39R62.

In light of the above, Applicants respectfully request the Examiner reconsider and withdraw the rejection to claims 1-32 under 35 U.S.C. § 103(a).

IX. Conclusion

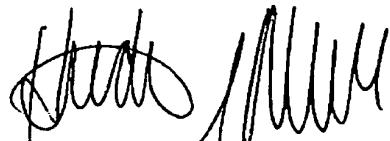
In conclusion, Applicants submit in light of the above amendments and remarks, the claims as amended are in a condition for allowance, and reconsideration is respectfully requested.

No additional fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Reconsideration and allowance is respectfully requested.

Respectfully submitted,



Heidi S. Nebel, Reg. No. 37,719
McKEE, VOORHEES & SEASE
801 Grand Avenue, Suite 3200
Des Moines, Iowa 50309-2721
Phone No. (515) 288-3667
Fax No. (515) 288-1338
CUSTOMER NO: 27142

Attorneys of Record

- tb -

Application No. 09/759,791

**AMENDMENT — VERSION WITH MARKINGS
TO SHOW CHANGES MADE**

In the Specification

The paragraph beginning at page 29, line 32 has been amended as follows:

With the advent of molecular biological techniques that have allowed the isolation and characterization of genes that encode specific protein products, scientists in the field of plant biology developed a strong interest in engineering the genome of plants to contain and express foreign genes, or additional, or [modified] modified versions of native or endogenous genes (perhaps driven by different promoters) in order to alter the traits of a plant in a specific manner. Such foreign, additional and/or modified genes are referred to herein collectively as "transgenes". Over the last fifteen to twenty years several methods for producing transgenic plants have been developed, and the present invention, in particular embodiments, also relates to transgenic versions of the claimed hybrid maize line 39R62.

In the Claims

Please amend the following claims:

6. (Amended)

[A] The tissue culture according to claim 5, the cells or protoplasts being from a tissue selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, silks, flowers, kernels, ears, cobs, husks, and stalks.

8. (Amended)

The maize plant of claim 2 wherein said plant has been manipulated to be [is] male sterile.

10. (Amended)

The [maize plant breeding program] method of claim 9 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

11. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 2, wherein said maize plant has derived at least 50% of its ancestral alleles from 39R62 [said maize plant] and is capable of expressing a combination of at least two 39R62 traits selected from the group consisting of: excellent yield potential, good dry down, good stalk strength, good test weight, good early growth, above average Northern Leaf Blight resistance, above average Eyespot resistance, above average Common Rust tolerance, above average Gibberella Ear rot tolerance, [suited] favorable to [the Northwest, Northcentral, Northeast regions of the United States as well as Central and Eastern Canada] Minnesota, Wisconsin, Michigan, New York, Vermont, North Dakota, South Dakota, Wyoming, Washington, Oregon, Montana, Utah, Idaho, and Ontario and Quebec Canada, and a relative maturity of approximately 81 based on the Comparative Relative Maturity Rating System for harvest moisture of grain.

12. (Amended)

[A] The hybrid maize plant according to claim 2, wherein the genetic material of said plant contains one or more transgenes.

14. (Amended)

The [maize plant breeding program] method of claim 13 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

15. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 12, wherein said maize plant has derived at least 50% of its ancestral alleles from 39R62 [said maize plant] and is capable of expressing a combination of at least two 39R62 traits selected from the group consisting of: excellent yield potential, good dry down, good stalk strength, good test weight, good early growth, above average Northern Leaf Blight resistance, above average Eyespot resistance, above average Common Rust tolerance, above average Gibberella Ear rot tolerance, [suited] favorable to [the Northwest, Northcentral, Northeast regions of the United States as well as Central and Eastern Canada] Minnesota, Wisconsin, Michigan, New York, Vermont, North Dakota, South Dakota, Wyoming, Washington, Oregon, Montana, Utah, Idaho, and Ontario and Quebec Canada, and a relative maturity of approximately 81 based on the Comparative Relative Maturity Rating System for harvest moisture of grain.

16. (Amended)

[A] The hybrid maize plant according to claim 2, wherein the genetic material of said plant contains one or more genes transferred by backcrossing.

18. (Amended)

The [maize plant breeding program] method of claim 17 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

19. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 16, wherein said maize plant has derived at least 50% of its ancestral alleles from 39R62 [said maize plant] and is capable of expressing a combination of at least two 39R62 traits selected from the group consisting of: excellent yield potential, good dry down, good stalk strength, good test weight, good early growth, above average Northern Leaf Blight resistance, above average Eyespot resistance, above average

Common Rust tolerance, above average Gibberella Ear rot tolerance, [suited] favorable to [the Northwest, Northcentral, Northeast regions of the United States as well as Central and Eastern Canada] Minnesota, Wisconsin, Michigan, New York, Vermont, North Dakota, South Dakota, Wyoming, Washington, Oregon, Montana, Utah, Idaho, and Ontario and Quebec Canada, and a relative maturity of approximately 81 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, wherein a sample of a maize variety 39R62 was deposited under ATCC Accession Number

21. (Amended)

The maize plant of claim 20 wherein said maize plant has been manipulated to be [is] male sterile.

23. (Amended)

The [maize plant breeding program] method of claim 22 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

24. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 20, wherein said maize plant has derived at least 50% of its ancestral alleles from 39R62 [said maize plant] and is capable of expressing a combination of at least two 39R62 traits selected from the group consisting of: excellent yield potential, good dry down, good stalk strength, good test weight, good early growth, above average Northern Leaf Blight resistance, above average Eyespot resistance, above average Common Rust tolerance, above average Gibberella Ear rot tolerance, [suited] favorable to [the Northwest, Northcentral, Northeast regions of the United States as well as Central and Eastern Canada] Minnesota, Wisconsin, Michigan, New York, Vermont, North Dakota, South Dakota, Wyoming, Washington, Oregon, Montana, Utah, Idaho, and Ontario and Quebec Canada, and a relative maturity of approximately 81 based on the

Comparative Relative Maturity Rating System for harvest moisture of grain, wherein a sample of a maize variety 39R62 was deposited under ATCC Accession Number

25. (Amended)

[A] The hybrid maize plant according to claim 20, wherein the genetic material of said plant contains one or more transgenes.

27. (Amended)

The [maize plant breeding program] method of claim 26 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

28. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 25, wherein said maize plant has derived at least 50% of its ancestral alleles from 39R62 [said maize plant] and is capable of expressing a combination of at least two 39R62 traits selected from the group consisting of: excellent yield potential, good dry down, good stalk strength, good test weight, good early growth, above average Northern Leaf Blight resistance, above average Eyespot resistance, above average Common Rust tolerance, above average Gibberella Ear rot tolerance, [suited] favorable to [the Northwest, Northcentral, Northeast regions of the United States as well as Central and Eastern Canada] Minnesota, Wisconsin, Michigan, New York, Vermont, North Dakota, South Dakota, Wyoming, Washington, Oregon, Montana, Utah, Idaho, and Ontario and Quebec Canada, and a relative maturity of approximately 81 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, wherein a sample of a maize variety 39R62 was deposited under ATCC Accession Number

29. (Amended)

[A] The hybrid maize plant according to claim 20, wherein the genetic material of said plant contains one or more genes transferred by backcrossing.

31. (Amended)

The [maize plant breeding program] method of claim 30 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

32. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 29, wherein said maize plant has derived at least 50% of its ancestral alleles from 39R62 [said maize plant] and is capable of expressing a combination of at least two 39R62 traits selected from the group consisting of: excellent yield potential, good dry down, good stalk strength, good test weight, good early growth, above average Northern Leaf Blight resistance, above average Eyespot resistance, above average Common Rust tolerance, above average Gibberella Ear rot tolerance, [suited] favorable to [the Northwest, Northcentral, Northeast regions of the United States as well as Central and Eastern Canada] Minnesota, Wisconsin, Michigan, New York, Vermont, North Dakota, South Dakota, Wyoming, Washington, Oregon, Montana, Utah, Idaho, and Ontario and Quebec Canada, and a relative maturity of approximately 81 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, wherein a sample of a maize variety 39R62 was deposited under ATCC Accession Number

Please add the following new claims:

33. (New)

A method of making a hybrid maize plant designated 39R62 comprising:
crossing an inbred maize plant GE570800, deposited as _____ with a second inbred maize plant GE533276, deposited as _____; and